

Sarasota Bay Condition Report for 2021

✓

PASS

Chl-a

N

P

3 out of 3 indicators were rated as **PASS**.

All three indicators must pass for the bay to be rated as **PASS**.

Summary:

Water quality in Sarasota Bay, already excellent, improved in 2021. All three major indicators—Chlorophyll *a*, Total Nitrogen, and Total Phosphorus concentrations—were lower than in 2020. While Nitrate-Nitrite levels rose very slightly, mean concentrations of both Ammonia-Ammonium and Total Kjeldahl Nitrogen decreased.

Note: Beginning in 2020, Sarasota County switched from measuring apparent color to true color. The latter will be added to Bay Conditions reports in the near future.



Bays included in this report: Bayou Louise, Brushy Bayou, Pansy Bayou, Sarasota Bay.

Water Chemistry Ratings

Total nitrogen, total phosphorus, and chlorophyll *a* levels are monitored carefully by water resource managers and used by regulatory authorities to determine whether a bay meets the water quality standards mandated by the Clean Water Act. The trend graphs for these indicators are shown below, along with their target and threshold values. A target value is a desirable goal to be attained, while a threshold is an undesirable level which is to be avoided. An individual indicator receives an "Excellent" rating if its mean value is below the target, a "Good" rating if its mean value is above the target but does not exceed the threshold, and a "Caution" rating if the mean value exceeds the threshold.

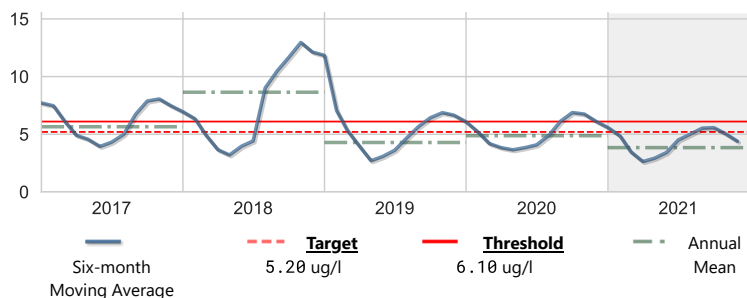
The charts below illustrate the general trend of water quality parameters. They show a six-month running average, which moderates high and low values in the data.



Chlorophyll a

Score: Excellent

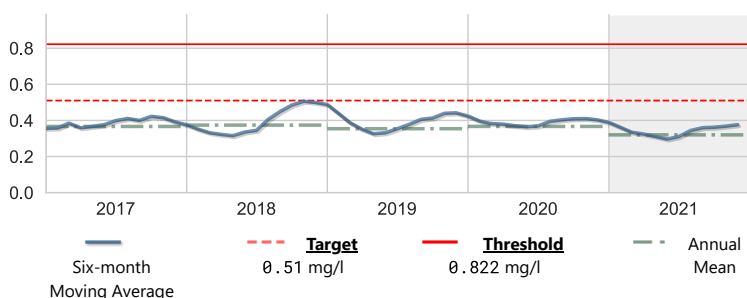
Units: ug/l	Year 2021	Historical period of record
High	24.67	129.20
Mean	3.84	4.84
Low	0.07	0.07
No. of Samples	221	8667



Nitrogen, Total

Score: Excellent

Units: mg/l	Year 2021	Historical period of record
High	0.695	2.075
Mean	0.320	0.339
Low	0.145	0.030
No. of Samples	221	5540



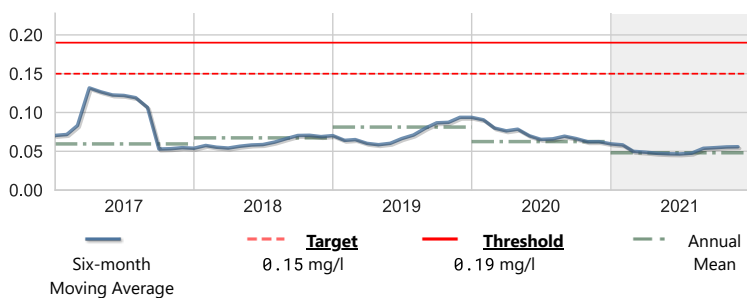
Targets and thresholds shown on this graph are advisory approximations computed by Sarasot recent data. Regulatory thresholds have not been established.



Phosphorus, Total

Score: Excellent

Units: mg/l	Year 2021	Historical period of record
High	0.130	4.400
Mean	0.048	0.079
Low	0.019	0.002
No. of Samples	221	5687

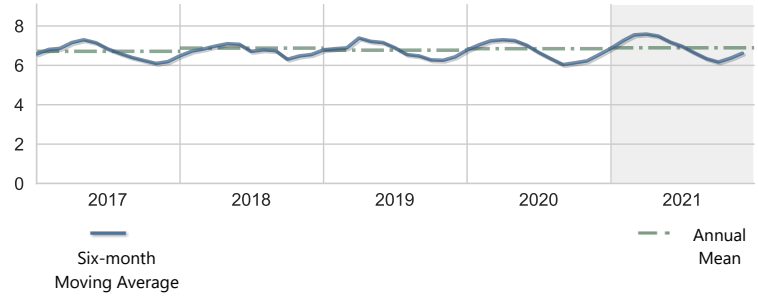


Other Measures of Bay Health

In addition to nutrient levels and chlorophyll concentration, dissolved oxygen levels, and water clarity are also objective indicators of bay health. These have complex interactive cycles which are affected by rainfall, temperature, and tidal action, as well as other factors. High nutrient levels (nitrogen and phosphorus) can stimulate excessive growth of marine algae (indicated by chlorophyll *a* level), resulting in reduced water clarity (and increased light attenuation) and depleted oxygen levels. Both plants and animals in a bay need oxygen to survive, and the seagrasses which provide food and cover for bay creatures need light for photosynthesis.

Dissolved Oxygen

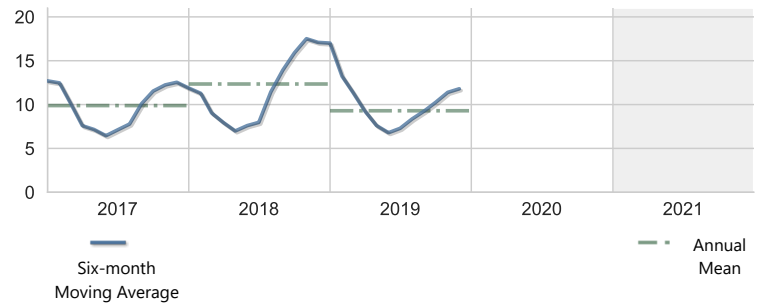
Units: mg/l	Year 2021	Historical period of record
High	9.39	13.80
Mean	6.89	6.73
Low	4.39	0.10
No. of Samples	221	17511



Apparent Color

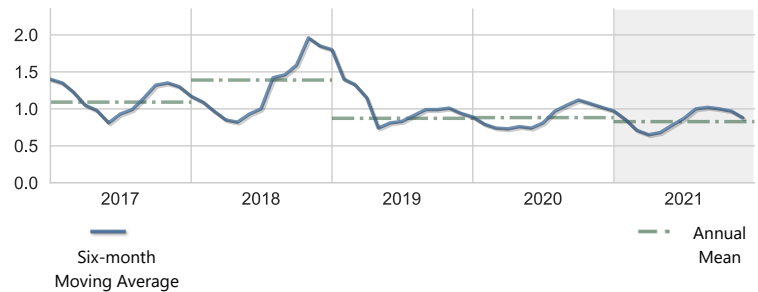
Note: The latest available sample for this parameter is from December 2019

Units: PCU	Year 2021	Historical period of record
High		98.00
Mean		13.01
Low		0.00
No. of Samples	0	4895



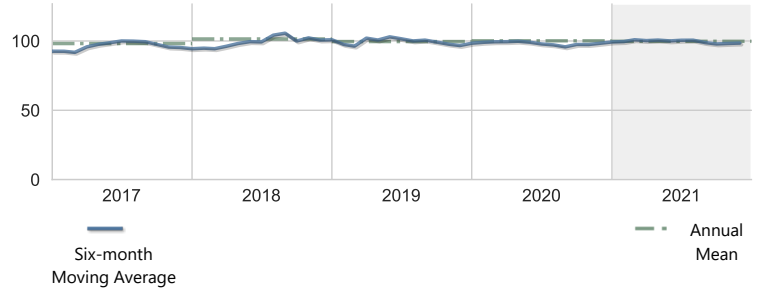
BOD, Biochemical oxygen demand

Units: mg/l	Year 2021	Historical period of record
High	5.70	9.20
Mean	0.83	1.12
Low	0.50	0.50
No. of Samples	179	3988



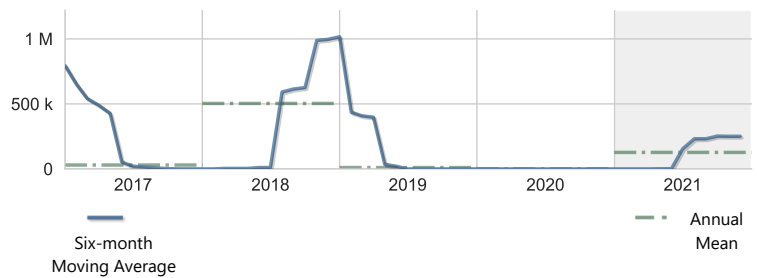
Dissolved oxygen saturation

Units: percent (%)	Year 2021	Historical period of record
High	139.00	214.71
Mean	99.77	98.07
Low	69.00	21.92
No. of Samples	221	16492



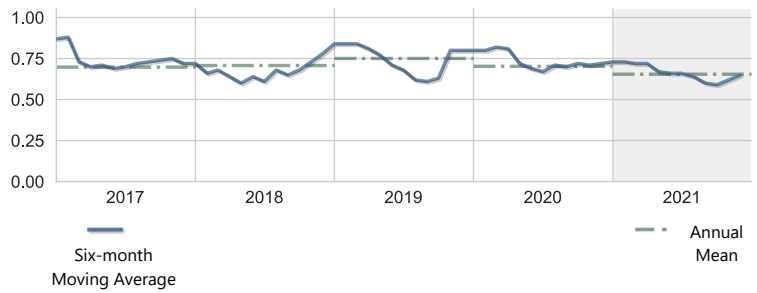
Karenia brevis ("red tide")

Units: #/l	Year 2021	Historical period of record
High	4224000.00	13440000.00
Mean	126941.34	92981.16
Low	0.00	0.00
No. of Samples	179	2946



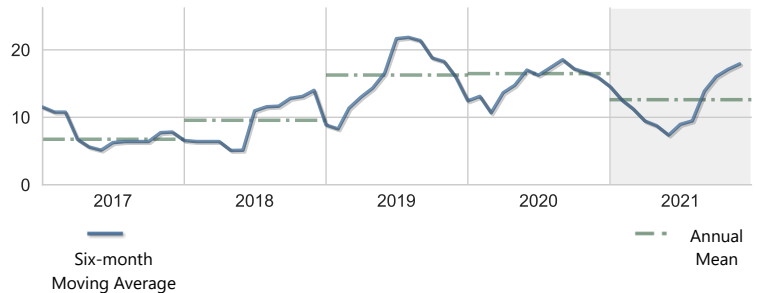
Light Attenuation

Units: K(1/m)	Year 2021	Historical period of record
High	1.44	5.43
Mean	0.65	0.70
Low	0.23	0.04
No. of Samples	179	4372



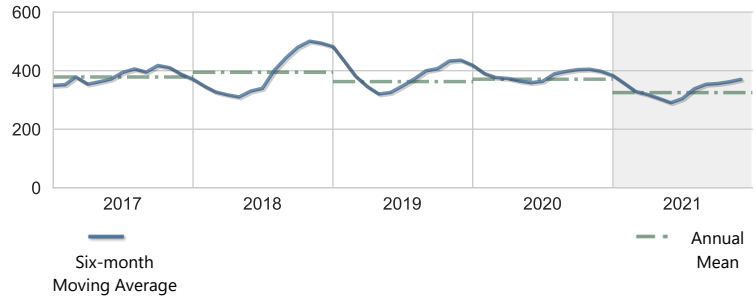
Nitrogen, Ammonia + Ammonium as N

Units: ug/l	Year 2021	Historical period of record
High	61.00	159.00
Mean	12.61	11.44
Low	5.00	5.00
No. of Samples	179	4383



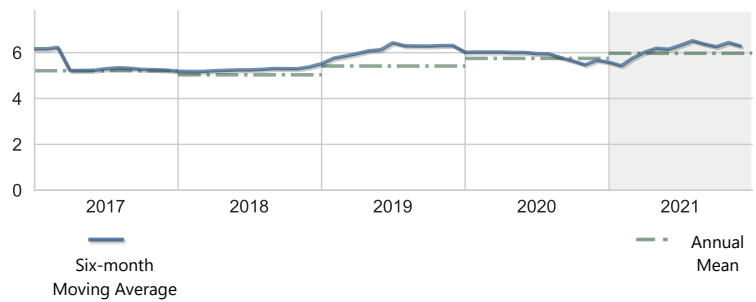
Nitrogen, Kjeldahl

Units: ug/l	Year 2021	Historical period of record
High	690.00	2030.00
Mean	325.11	370.31
Low	140.00	10.00
No. of Samples	221	5811



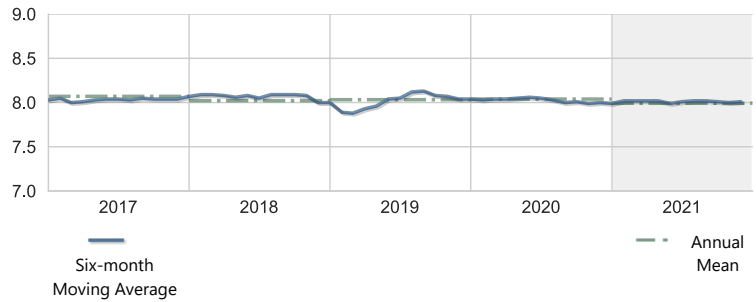
Nitrogen, Nitrite + Nitrate as N

Units: ug/l	Year 2021	Historical period of record
High	18.00	210.00
Mean	5.97	8.54
Low	5.00	1.00
No. of Samples	221	6631



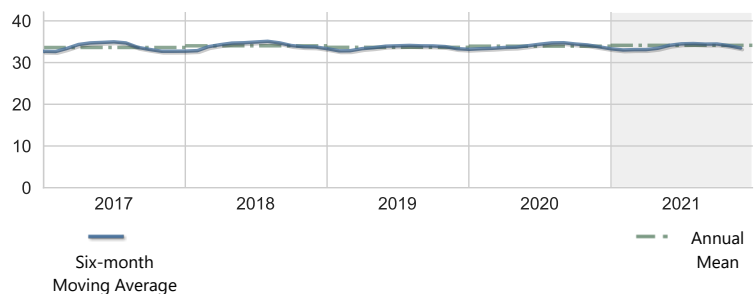
pH

Units: None	Year 2021	Historical period of record
High	8.24	9.62
Mean	7.99	8.07
Low	6.70	3.90
No. of Samples	221	14558



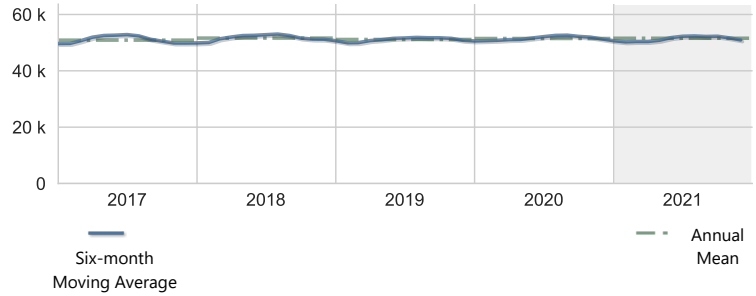
Salinity

Units: PSS	Year 2021	Historical period of record
High	37.40	68.20
Mean	34.13	33.26
Low	28.00	3.60
No. of Samples	263	19226



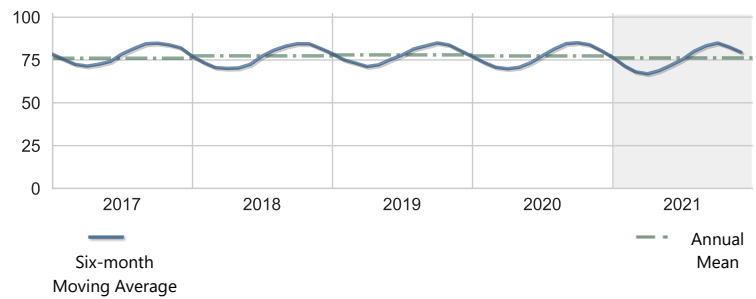
Specific conductance

Units: umho	Year 2021	Historical period of record
High	56390.00	94950.00
Mean	51562.08	51511.13
Low	43400.00	34.00
No. of Samples	221	5977



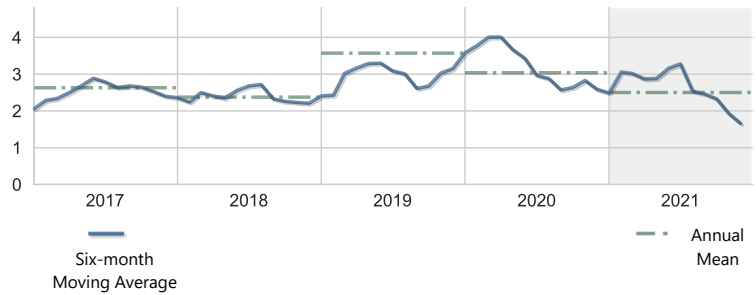
Temperature, water

Units: deg F	Year 2021	Historical period of record
High	88.88	100.40
Mean	76.19	77.00
Low	57.74	35.24
No. of Samples	221	19369



Turbidity

Units: NTU	Year 2021	Historical period of record
High	18.00	39.00
Mean	2.50	2.66
Low	0.40	0.03
No. of Samples	216	15265



Annual Averages

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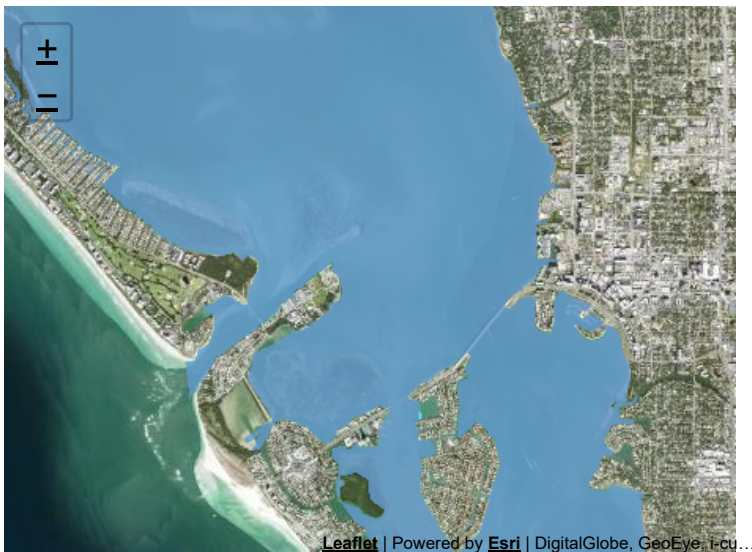
Indicator	Units	2017	2018	2019	2020	2021	Trend
Dissolved Oxygen	mg/l	6.71	6.88	6.77	6.85	6.89	
Dissolved oxygen saturation	percent (%)	98.15	101.45	99.58	100.13	99.77	
Light Attenuation	K(1/m)	0.70	0.71	0.75	0.70	0.65	
Salinity	PSS	33.62	34.02	33.66	33.93	34.13	
Turbidity	NTU	2.63	2.38	3.57	3.04	2.50	

Bay Contour Maps (2021)

Contour mapping is one of the best ways to visualize spatial differences in coastal water quality. The interactive map shown below presents monthly data for one selected water quality indicator atop an aerial view of the bay. Choose a different water quality parameter from the list at the top to change the map.

Showing 2021 Monthly Contour Maps for: Chlorophyll a

▼ January



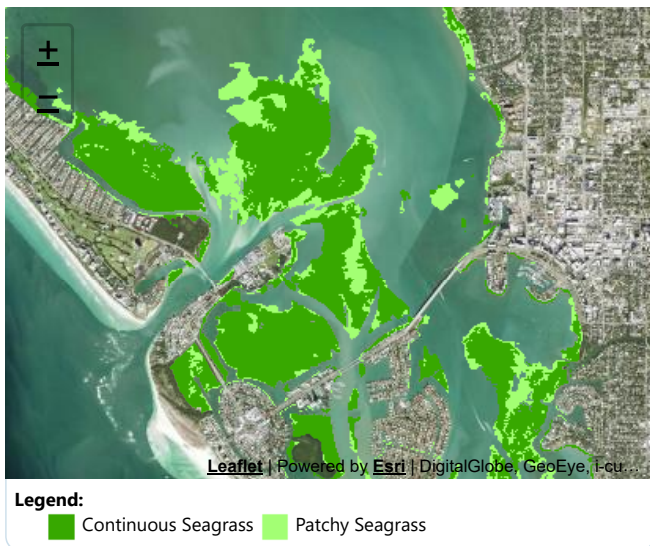
Contour Legend:

- Less than 1 mg/l
- 1.0 - 5.9 mg/l
- 6.0 - 10.9 mg/l
- 11.0 - 17.9 mg/l
- Greater than 18 mg/l

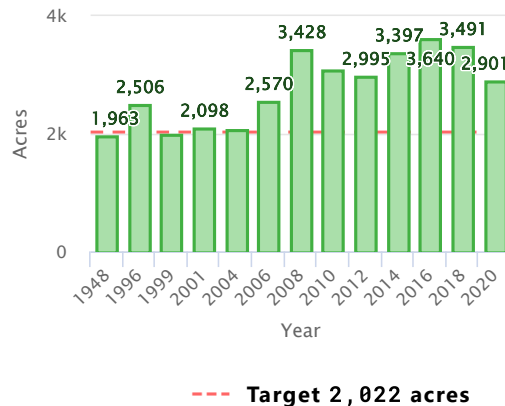
Seagrasses

Among the most important habitats in Florida's estuarine environments, seagrass beds are indispensable for the role they play in cycling nutrients, supplying food for wildlife, stabilizing sediments, and providing habitat for juvenile and adult finfish and shellfish. Use the interactive map below to observe the size, density and location of seagrass beds from year to year. The graph shows how the total amount of seagrass in the bay has changed over time. Seagrass calculations are aggregates of patchy and continuous seagrass measurements only. Recordings of attached algae are not included in these summaries.

Showing Seagrass Coverage for 2020:



Seagrass Acreage Variation within Sarasota Bay



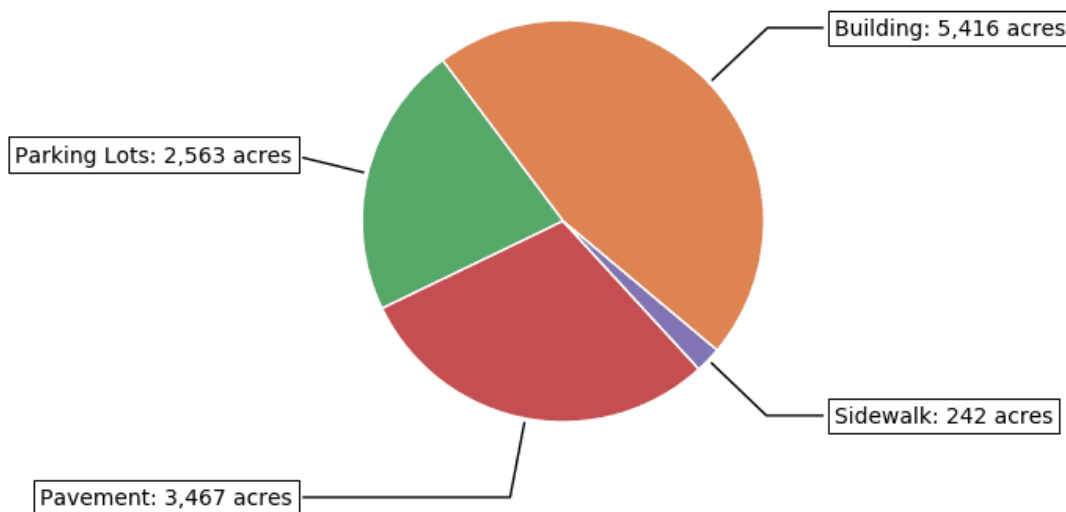
Impervious Features

Rain that falls on land that is in a natural state is absorbed and filtered by soils and vegetation as it makes its way into underground aquifers. However, in developed areas, "impervious surfaces" impede this process and contribute to polluted urban runoff entering surface waters. These surfaces include human infrastructure like roads, sidewalks, driveways and parking lots that are covered by impenetrable materials such as asphalt, concrete, brick and stone, as well as buildings and other permanent structures. Soils that have been disturbed and compacted by urban development are often impervious as well.

 **19%** of the land area within the **Sarasota Bay Watershed** is covered by impervious surfaces

2014 Impervious Surface Coverage by Type

in acres, within the Sarasota Bay Watershed



Land Use / Land Cover

2021 Bay Conditions Report for Sarasota Bay

Land use within a bay's watershed has a major effect on its water quality. In general, less development means better water quality. Land Cover/Land Use classifications categorize land in terms of its observed physical surface characteristics (upland or wetland, e.g.), and also reflect the types of activity that are taking place on it (agriculture, urban/built-up, utilities, etc.). Florida uses as its standard a set of statewide classifications which were developed by the Florida Department of Transportation.

Sarasota Bay is located within the Sarasota Bay Watershed. The chart below shows the land use / land cover characteristics for Sarasota Bay Watershed within the boundary of this Water Atlas. [View details about the Sarasota Bay Watershed »](#)

Acreage and Percentage within each Land Use / Land Cover Category for Sarasota Bay Watershed

Land Use Classification	1990	2005	2011	2014	2017	2020	Trend
Urban & Built-up	32,908 53.3%	37,844 61.3%	38,343 62.1%	37,987 61.6%	38,749 62.8%	56,970 59.1%	
Agriculture	6,338 10.3%	2,497 4%	2,215 3.6%	2,309 3.7%	1,822 3%	2,986 3.1%	
Rangeland	547 0.9%	199 0.3%	225 0.4%	430 0.7%	208 0.3%	261 0.3%	
Upland Forests	3,588 5.8%	2,109 3.4%	1,874 3%	1,923 3.1%	1,756 2.8%	2,075 2.2%	
Water	13,350 21.6%	14,227 23.1%	14,278 23.1%	14,131 22.9%	14,255 23.1%	25,360 26.3%	
Wetlands	2,870 4.7%	2,227 3.6%	2,229 3.6%	2,372 3.8%	2,327 3.8%	4,889 5.1%	
Barren Land	29 0%	9 0%	99 0.2%	109 0.2%	100 0.2%	76 0.1%	
Transportation and Utilities	1,845 3%	2,602 4.2%	2,452 4%	2,453 4%	2,511 4.1%	3,783 3.9%	

2020 Land Use / Land Cover for Sarasota Bay Watershed

as a percentage of land area for this watershed

